

# Case Letter

## Herpes Labialis–Induced Lip Leukoderma

To the Editor:

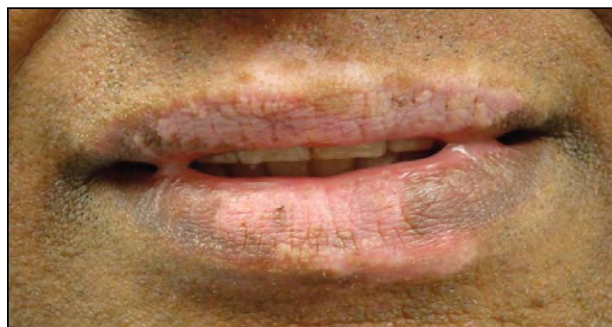
A 45-year-old man presented with slowly progressive discoloration of his lips over 30 years. The patient recalled tiny blisters appearing in many but not all areas prior to discoloration. Physical examination revealed well-defined, irregularly shaped, depigmented patches limited to the dry mucosal and adjacent cutaneous portions of the lips (Figure). A complete skin examination including analysis with Wood lamp was otherwise unremarkable. The differential diagnosis included vitiligo, contact leukoderma, discoid lupus erythematosus, and lip leukoderma secondary to recurrent herpes labialis infection. We diagnosed herpes labialis–induced leukoderma based on the history of recurrent vesicles preceding the onset of depigmentation, a positive herpes simplex virus (HSV) type 1 IgG antibody titer, the absence of suspected exposure to any contact irritants or allergens, and the lack of depigmentation in other areas on physical examination.

The 2 terms used for lip leukoderma caused by recurrent herpes labialis infection are *recurrent herpes-induced lip depigmentation* (HILD) and *herpes labialis–induced lip leukoderma* (HILL).<sup>1,2</sup> Both genders are affected; the age range reported for HILD and HILL is 19 to 27 years and 25 to 40 years, respectively. In HILD, depigmentation can affect the lips and adjacent skin, beginning 4 to 12 years after the onset of recurrent herpes labialis infection.<sup>1</sup> To our knowledge, there are no reports documenting the natural history of HILL; thus it is uncertain if HILL and HILD are the same disease. Nonetheless, recurrent HSV infection and melanocyte destruction

resulting in depigmentation are features of both conditions. Proposed pathogenic mechanisms for melanocyte destruction include a virus-induced autoimmune response or a direct virus-induced cytopathic effect.<sup>1</sup>

Other forms of lip leukoderma related to HSV infection include HSV infection in association with lip leukoderma and herpes-induced isomorphic phenomenon.<sup>3,4</sup> Lip depigmentation begins prior to the onset of herpes labialis in both conditions, thus distinguishing these entities from HILL and HILD. As the name implies, there is no causal relationship between herpes labialis and leukoderma in HSV infection in association with lip leukoderma; the co-occurrence of these diseases merely is coincidental.<sup>3</sup> In herpes-induced isomorphic phenomenon, patients with no history of herpes labialis infection have a pre-existing lip leukoderma that is etiologically unrelated to HSV (eg, contact leukoderma). These patients subsequently develop herpes labialis and new areas of depigmentation at the site(s) of infection. However, in contrast to HILL and HILD, HSV does not directly induce melanocyte destruction in herpes-induced isomorphic phenomenon; rather infection precipitates depigmentation by stimulating the same pathologic process that causes the preexisting leukoderma.<sup>4</sup>

Because of the absence of hair follicles and thus a follicular reservoir of melanocytes in the mucosal portions of the lip, lip leukoderma often is refractory



Well-defined, irregularly shaped, depigmented patches on the mucosal and cutaneous portions of the lips.

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to medical management, including psoralen plus UVA.<sup>1</sup> Surgical treatments of lip leukoderma secondary to recurrent herpes labialis infection include autologous miniature punch grafting and split-thickness (Thiersch) grafting.<sup>1,2</sup> Either approach requires antiviral prophylaxis before and after grafting to prevent HSV reactivation and graft rejection.<sup>2</sup> An alternative approach is micropigmentation with ferrous sulfate.<sup>5</sup> One advantage to the latter approach is that pigment persists despite recurrences of herpes labialis infection.

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